

Claims:

1-16. (cancelled)

17. (currently amended) A method of enhancing the unipolar charge which is imparted to droplets of an emulsion on discharge from an aerosol spray device, the method comprising forming the droplets from an oil-in-water or a water-in-oil emulsion composition which comprises:

(a) at least one propellant in an amount of about 2 to about 80% w/w;
(b) at least one non-ionic surfactant in an amount of from about 0.01 to about 1.0% w/w, said surfactant being selected from the group consisting of: mono- and poly-glyceryl esters; and alkoxylated alcohols;;

(c) optionally at least one solvent within an oil phase of the emulsion in an amount of up to about 80% w/w, said solvent being selected from the group consisting of n-paraffins, isoparaffins and naphthenes;

(d) at least one component selected from the group consisting of polar, ionic and aromatic compounds, in an amount of from about 0.1 to about 10% w/w of the non-ionic surfactant present in the composition, said component being selected from the group consisting of

(I) alkali metal salts, alkaline earth metal salts, ammonium salts, amine salts or amino alcohol salts of at least one of the compounds selected from the group consisting of alkyl sulphates, alkyl ether sulphates, alkylamidoether sulphates, alkylaryl polyether sulphates, monoglyceride sulphates, polyglyceride sulphates, alkyl sulphonates, alkylamine sulphonates, alkyl-aryl sulphonates, olefin sulphonates, paraffin sulphonates, alkyl sulphosuccinates, alkylether sulphosuccinates, alkylamide sulphosuccinates, alkyl sulphocinnamates, alkyl sulphoacetates, alkyl phosphates, alkylether phosphates, acyl sarcosinates, acyl isothionates and N-acyl taurates,

(II) alkyl amidopropylbetaines, alkylamidobetaines, alkylamidosulphobetaines, alkylbetaines, aminimides, quaternary ammonium compounds, quaternary phosphonium compounds, and

(III) ~~carboxylic acids, carboxylic acid~~ lauric acid, oleic acid, palmitic acid, ricinoleic acid or stearic acid or their respective salts, esters, ketones, aldehydes, or amides ~~or amines of carboxylic acids containing from 6 to 30 carbon atoms,~~

in an amount such that a theoretical conductivity of the emulsion is less than a bulk conductivity of the emulsion and the difference is at least about $0.5\mu\text{S cm}^{-1}$; and

(e) water.

18. (previously presented) The method according to claim 17, wherein the solvent is present and is selected from the group consisting of n-paraffins and isoparaffins.

19. (previously presented) The method according to claim 18, wherein the solvent is present in an amount up to about 40% w/w.

20. (currently amended) A method of enhancing the electrostatic charge imparted to droplets of a composition in a form of a water-in-oil or an oil-in-water emulsion on discharge from an aerosol spray device in which the composition includes:

(a) at least one propellant in an amount of about 2 to about 80% w/w;

(c) optionally at least one solvent within an oil phase of the emulsion in an amount of up to about 80% w/w, said solvent being selected from the group consisting of n-paraffins, isoparaffins and naphthenes; and

(e) water;

the method comprising mixing with the composition (b) a non-ionic surfactant in an amount of from about 0.1 to about 1.0% w/w, said surfactant being selected from the group consisting of: mono- and poly-glyceryl esters; and alkoxyated alcohols; and (d) at least one component selected from the group consisting of polar, ionic and aromatic compounds, in an amount of from about 0.01 to ~~from~~ about 10% w/w of the non-ionic surfactant present in the composition, said component being selected from the group consisting of

- (I) alkali metal salts, alkaline earth metal salts, ammonium salts, amine salts or amino alcohol salts of at least one of the compounds selected from the group consisting of alkyl sulphates, alkyl ether sulphates, alkylamidoether sulphates, alkylaryl polyether sulphates, monoglyceride sulphates, polyglyceride sulphates, alkyl sulphonates, alkylamine sulphonates, alkyl-aryl sulphonates, olefin sulphonates, paraffin sulphonates, alkyl sulphosuccinates, alkylether sulphosuccinates, alkylamide sulphosuccinates, alkyl sulphocinnamates, alkyl sulphoacetates, alkyl phosphates, alkylether phosphates, acyl sarcosinates, acyl isothionates and N-acyl taurates,
- (II) alkyl amidopropylbetaines, alkylamidobetaines, alkylamidosulphobetaines, alkylbetaines, aminimides, quaternary ammonium compounds, quaternary phosphonium compounds, and
- (III) carboxylic acids, carboxylic acid lauric acid, oleic acid, palmitic acid, ricinoleic acid or stearic acid or their respective salts, esters, ketones, aldehydes, or amides ~~or amines of carboxylic acids containing from 6 to 30 carbon atoms,~~ and the amount of the component being such that a theoretical conductivity of the emulsion is less than a bulk conductivity of the emulsion.

21-24. (cancelled)

25. (previously presented) The method according to claim 17 wherein the difference between the theoretical conductivity of the emulsion and the bulk conductivity of the emulsion is at least about $4 \mu\text{S cm}^{-1}$.

26. (previously presented) The method according to claim 25 wherein the difference between the theoretical conductivity of the emulsion and the bulk conductivity of the emulsion is at least about $6 \mu\text{S cm}^{-1}$.

27. (previously presented) The method according to claim 17 wherein at least about 90% by volume of the droplets of the disperse phase within the emulsion have an average diameter of less than about $60 \mu\text{m}$.

28. (previously presented) The method according to claim 27 wherein at least about 90% by volume of the droplets of the disperse phase within the emulsion have an average diameter in a range of about 20 to about 40 μm .

29-33. (cancelled)

34. (previously presented) The method according to claim 17 wherein the droplets formed on discharge from an aerosol spray device have a charge to mass ratio of at least about $\pm 1 \times 10^{-4}$ C/kg.

35. (previously presented) The method according to claim 34 wherein the droplets formed on discharge from an aerosol spray device have a charge to mass ratio of at least about $\pm 2 \times 10^{-4}$ C/kg.

36. (previously presented) The method according to claim 17 in which the composition is an insecticidal composition that contains at least one insecticide in an amount of about 0.001 to about 5% w/w.